

## Completed Pollution Prevention Project Case Study

United States Department of Energy  
Office of Environmental Management  
Fact Sheet

### Steel Fittings Reduce Oil Spills

Los Alamos National Laboratory

#### Original Problem

Heavy equipment such as garbage trucks and backhoes occasionally leaked hydraulic fluid or oil during operation. The leaks were nearly always caused by the failure of aluminum fittings on the rubber hoses that liquids flowed through. Cleaning up the spills wasted time and increased waste disposal expenses unnecessarily.

#### The Project Solution

The Maintenance Shop invested in a supply of steel fittings and a new machine that could crimp the steel fittings onto rubber hoses. Right away the aluminum fittings with the highest risk of being physically damaged were replaced with steel. Now the maintenance shop replaces aluminum fittings with steel ones whenever an equipment inspection reveals that an aluminum fitting is bent or cracked.

#### Value of Improvement

By replacing the aluminum fittings with steel on the most heavily used equipment, the leak rate from hydraulic lines decreased by approximately 60%. Since steel fittings fail much less frequently than aluminum ones, less time is spent replacing broken fittings. Less time is also needed to clean up oil spills, and about 70% less oil-contaminated soil is being generated now. The amount of oil-contaminated soil from spills, classified as New Mexico Special Waste, has been reduced by over 13 metric tons per year.

#### Lifecycle Waste Reduction

Lifecycle Waste Reduction	~13 metric tons /year
Commencement Date	2002
Project Useful Life (Years)	Indefinite



#### DOE Monetary Benefits

Total Project Cost	NA
Lifecycle Savings	~118,000 / year
Return on Investment	NA

#### Benefits At-A-Glance

- The leak rate from hydraulic lines has decreased by about 60%.
- Fewer spills reduced the amount of New Mexico Special Waste generated by approximately 13 metric tons per year.
- Over \$100,000 in labor and disposal costs for cleaning up oil leaks was avoided during the first year.

## **Steel Fittings Reduce Oil Spills**

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	<b>Summary Data</b>
Priority Area:	Waste Minimization Projects
Project Type:	Process Improvement
Total Project Cost:	NA
Lifecycle Savings:	~\$118,000 per year in reduced labor and waste disposal.
Implementing Group:	Heavy Equipment Maintenance Shop
Benefiting Group:	All
Useful Life Years:	Indefinite
Return on Investment:	NA
Lifecycle Waste Reduction:	~13 metric tons of NM Special Waste annually.
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